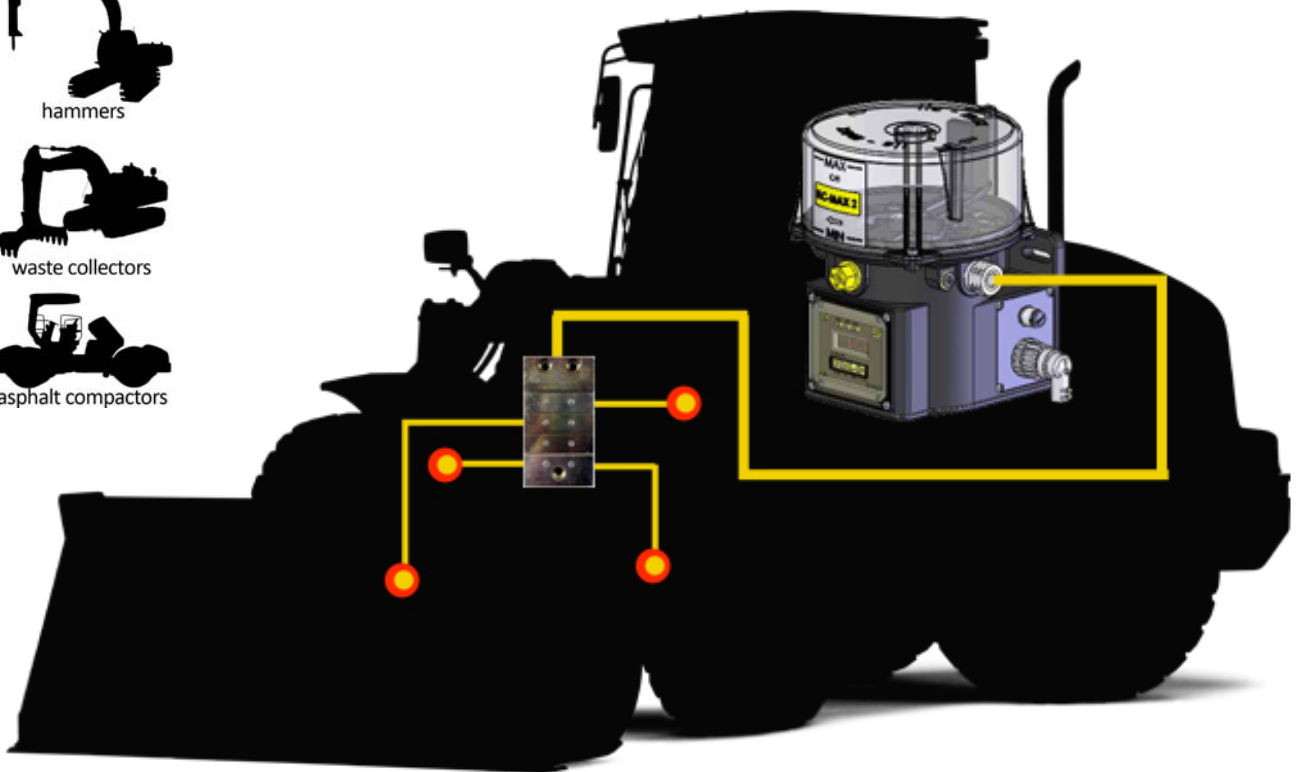
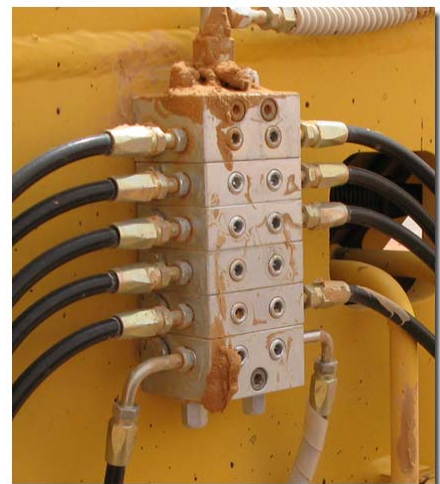




CENTRALIZED LUBRICATION SYSTEMS
FOR CONSTRUCTION MACHINERY

lower maintenance costs
higher productivity





PINS AND BUSHINGS HAVE TO BE LUBRICATED EVERY DAY

To improve life of pins and bushing, we suggest to use frequent lubrication to maintain the proper lubricant film to reduce wear and also to prevent rock dust, dirt, sand and water entering inside. These contaminants reduce pins and bushings life drastically and cause downtime and higher maintenance cost.

Manual lubrication takes *at least 30 minutes per machine* every day.

It is not easy to lubricate manually every day because:

- weather conditions
- production needs (*centralized lubrication prevents machinery downtime*)
- safety (*the employee has to climb over machine*)
- logistics (*not always manual lubrication equipment are available*)
- many bucket and boom pins need to be lubricated in more than one position to evenly distribute lubricant
- not all employees perform lubrication properly

Failure to lubricate every lubrication point, on every machine, every day, can negatively affect schedules, maintenance costs and “on time” performance.

When manually lubricating a bearing, grease is

- not evenly distributed inside the bushings
- not completely purged.



THE COST OF IMPROPER MANUAL LUBRICATION

- increased costs to repair and substitute parts
- machinery downtime due to unexpected repairs
- wearing down the pins, bushings and other components
 - lower resale value for used equipment
- risk of excess lubrication and high consumption of lubricant



YOU NEED CENTRALIZED LUBRICATION FOR PERIODICALLY LUBRICATION

Recommendations:

- Use centralized lubrication systems for periodically lubrication.
- When is requested to lubricate with an interval of more than 250 hours, can be used manual lubrication

Benefits of centralized lubrication:

- Gain 30 to 45 minutes a day of increase productivity for each machine by lubricating while the machines are running.
- Delivery frequent and smaller amounts of lubricant to each point improve pins and bushing life and reduce repairs.
- Reduce lubricant waste by delivering the exact amount necessary.
- Safety is improved by deleting daily practice of climbing over machinery to lubricate.
- Proper lubrication no matter the environment or weather conditions.
- Increased resale value of equipment.

The ILC systems advantage:

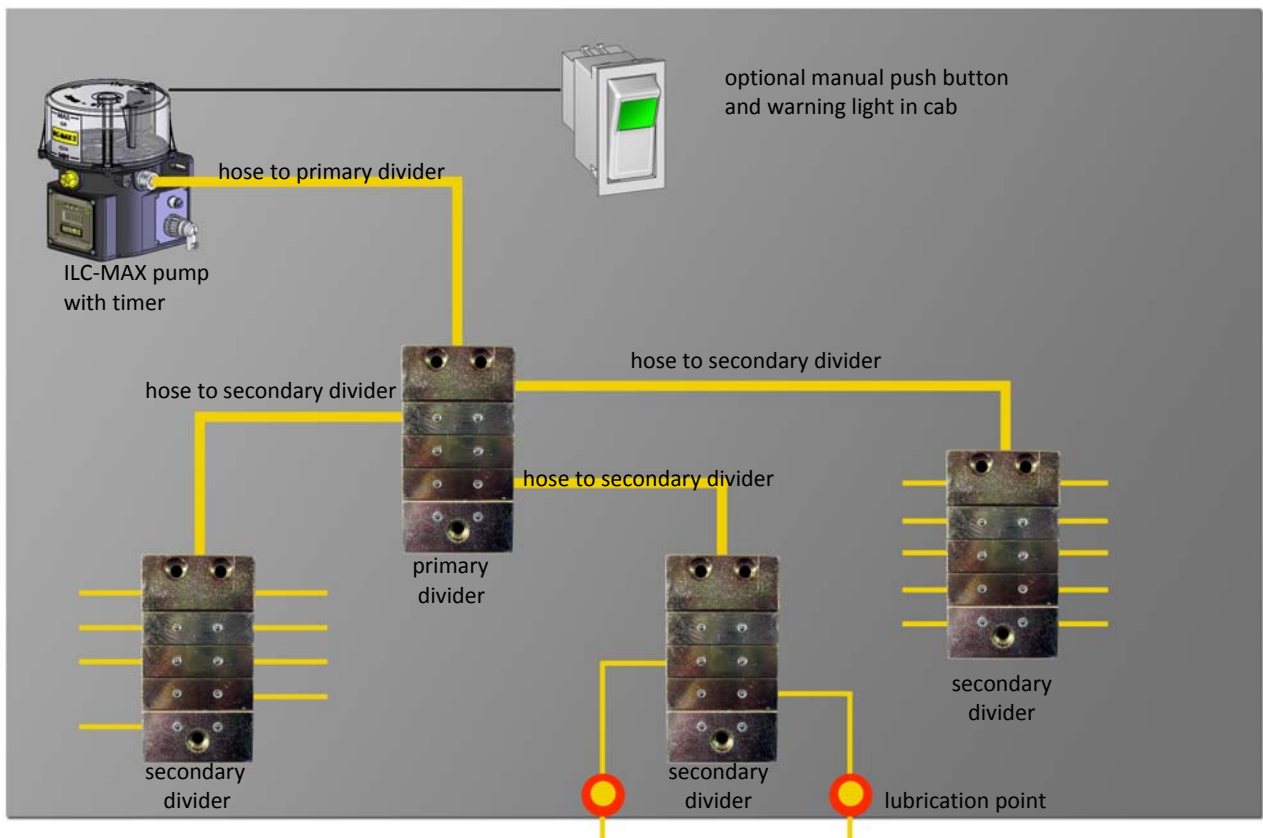
Through ILC systems, small, measured amounts of lubricant are delivered to each point at specific time intervals while machinery is operating. This method produces a grease “donut” seal around each pin and bushing, which acts as a barrier to keep contamination out. Unlike manual lubrication, lubricant is spread evenly around the pins and bushings.



HOW THE LUBRICATION SYSTEM WORKS

System description

A typical system includes an automatic electric pump, progressive dividers, main hose and secondary hoses and tamer with custom settings. ILC pump combines a reservoir, pump and control system into one unit. Available control options include the ability to notify the operator of a system failure using a special light in the cab. The lubricant flow created by the pump is divided in the progressive distributor and evenly distributed to each bushing, pin and bearing according to their needs.



System operation

- 1 The pump is actuated automatically by an internal adjustable timer.
- 2 Lubricant flow starts and it is delivered to the primary divider through the main hose.
- 3 The primary progressive divider distributes lubricant in metering amounts to the secondary divider.
- 4 The secondary dividers proportion the grease and deliver exact metering amounts to the bearings, bushings and pins according to their specific needs through secondary hoses.

ILC PUMP FEATURES

The ILC pump

Designed for the harsh environment of the construction and mining industries, ILC pumps are loaded with features:

- Available in 12 V DC, 24 V DC and 24 V AC, 115 V AC and 230 V AC.
- Capable of dispensing no. 2 NLGI grease (oil systems available).
- Optional low-level alarms and system operation alarms with warning lights in the cab.
- Reservoir (2, 4, 5 or 8 litres) can be refilled through a grease fitting, typically every 100 to 350 hours of operation.
- All pumps have high-pressure capability to help ensure grease is delivered to each component.
- A blocked lubrication point can be detected at the pump or in the cab with the optional alarm and warning light.
- Pump controls run-time with built-in timer.

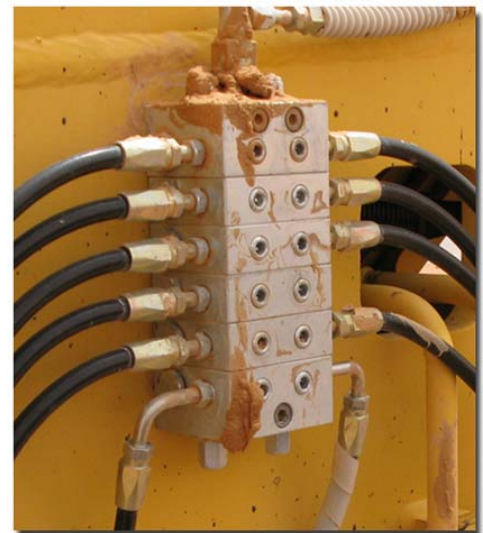


ILC PROGRESSIVE DIVIDERS FEATURES

ILC progressive dividers

The heart of the ILC system is the progressive divider. These dividers utilize unique internal pistons to precisely divide the grease flow to help ensure each pin, bushing and bearing receives the proper amount of lubricant.

- Operating pressures of up to 280 bar. The divider delivers grease to every point, even under heavy loads.
- Standard dividers can be ported to deliver more grease to specific lubrication points.
- If the pump is ever damaged, the system can be cycled from the grease fitting on the pump or primary divider.
- Dividers are available with cycle indicator pins to provide visual indication of operation.
- With advanced monitoring, a proximity switch sends a signal to the pump when the system has completed a lubrication cycle to each pin and bushing.



ILC OFFERS CUSTOM SYSTEMS FOR ALL BRANDS OF EXCAVATORS

ILC knows how to tackle the toughest situations – including excavators

The ILC network of qualified distributors can custom design and install systems on most pieces of equipment, including plant equipment – such as conveyers, crushers, screens, etc.

High impact areas

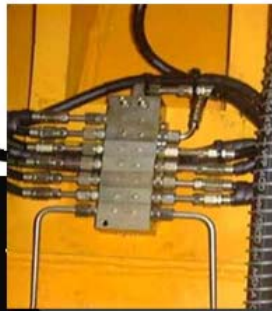
The H-link and bucket can be lubricated automatically with custom guarding installed. The fittings for the stick and bucket connections are relocated to the top side and special guarding is added for protection.

Boom arm lubrication point



Optional **push button**
with buzzing light for alarm

Secondary progressive divider
serving swing circle, boom and arm



Primary progressive divider



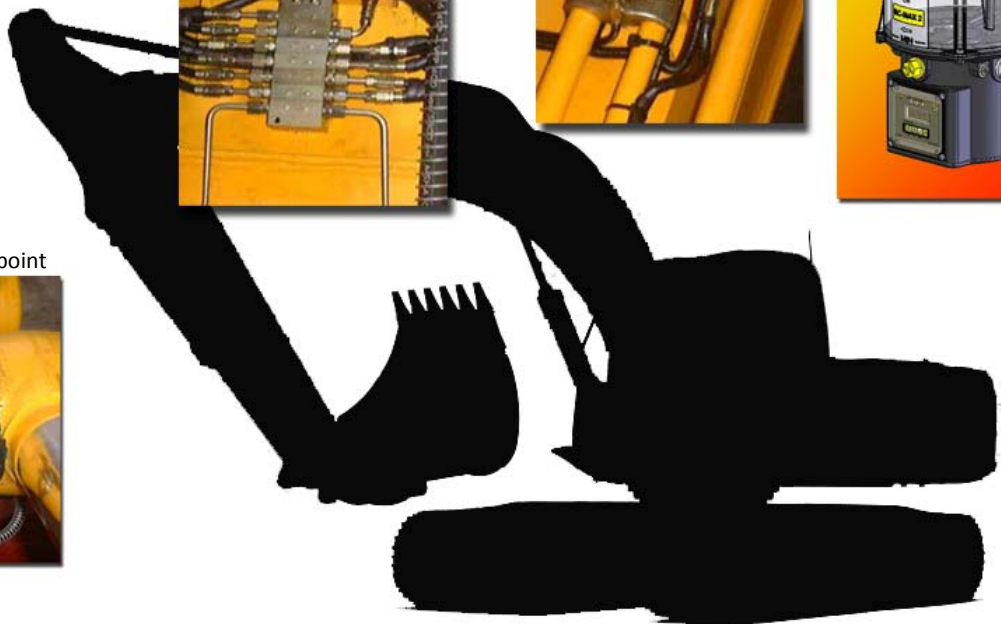
Bucket lubrication
point



ILC-MAX pump
with timer, low
level and alarms



H-Link lubrication point



**ILC OFFERS CUSTOM SYSTEMS
FOR ALL BRANDS OF WHEEL LOADERS**



On this **wheelloader**, an ILC-MAX pump is mounted on the operator deck or near the cab for easily monitoring



Progressive dividers help to ensure lubricant is delivered to high-demand bearings, pins and bushings



ILC dividers are experienced to help ensure **installation** are clean and neat

LUBRICATE MACHINERY WHILE IT IS RUNNING AND REDUCE DOWNTIME

ILC centralized lubrication systems create a consistent, properly greased “donut” that seals out grit and grime from articulating joints, pins and bearings. Lines going to high-impact zones are consistently protected.

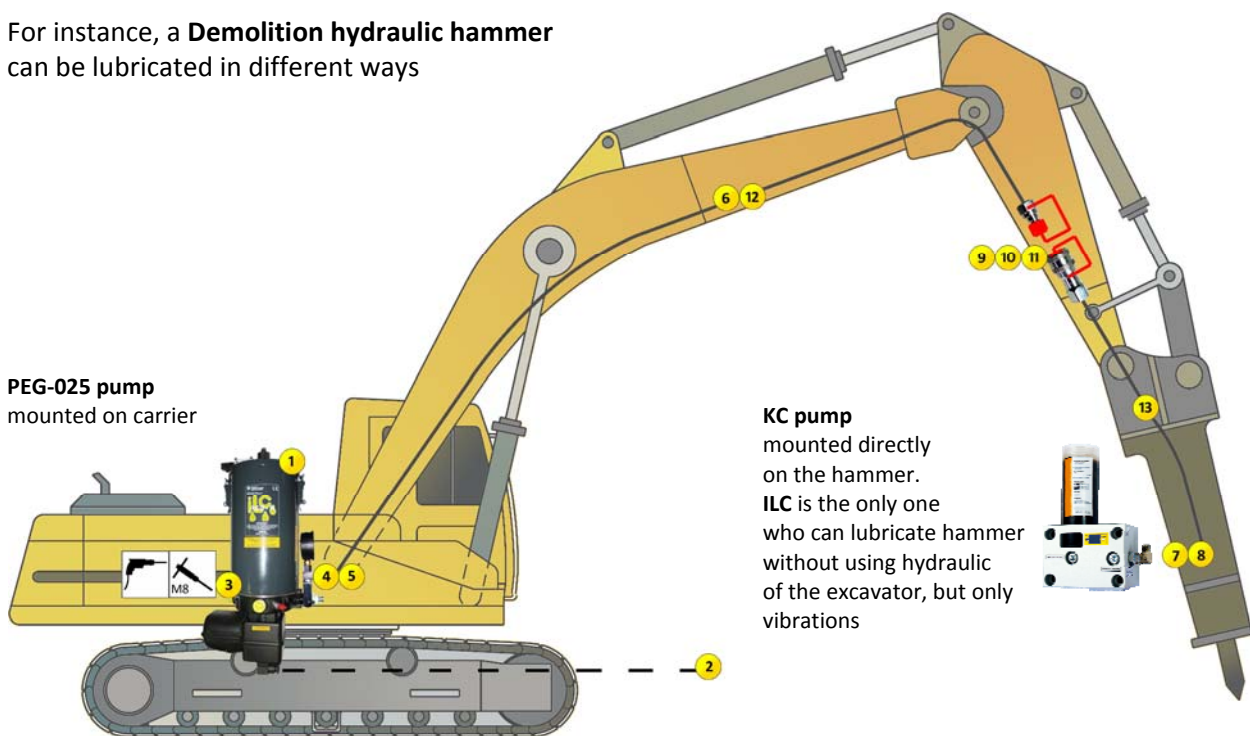
Other equipment

The ILC network of qualified distributors has experience installing systems on many types of mobile and stationary construction equipment.

Other common applications include:

- graders, scrapers, dozers
- drills (horizontal and vertical)
- on-road trucks paving equipment (milling machines)
- trenchers
- crushers, screens, conveyors
- ready mix trucks
- cement pumpers
- recyclers
- backhoes
- and many more

For instance, a **Demolition hydraulic hammer** can be lubricated in different ways





**AN ILC SYSTEM CAN PAY FOR
ITSELF IN LESS THAN ONE YEAR**

Calculate the return on your investment *

Annual costs to manually lubricate a mid-size loader

Labor

30 minutes per 8 hour shift x 24,83 €/hour x 250 days 3.104,00 €

Lost production

30 minutes per 8 hour shift x 78,55 €/hour x 250 days 9.818,00 €

Manual lubrication cost

12.922,00 €

Annual costs to repair failed components

Replacement pins and bushings

2 pins x 414,00 € each 828,00 €

Repair labor

One person x 55,00 € x 2 repairs x 6 hours each 660,00 €

Lost production

2 repairs x 6 hours each x 80,00 €/hour 960,00 €

Repair cost

2.448,00 €

Annual manual lubrication cost

15.370,00 €

Estimated savings with an ILC centralized lubrication system

	% Savings	Savings €
Labor and lost production to manually lubricate	95%	12.275,90 €
Parts, labor and lost production to repair failed components	50%	1.224,00 €

Total annual savings

13.499,90 €

System cost and return on investment

Typical installed ILC system cost for a loader 6.456,45 €

Return on investment

System cost/annual savings x 12 months = R.O. I.

6.456,45 €/13.499,90 € x 12 months = 5,7 months
pay back (ROI)

System cost will vary based on options, local labor costs and location of installation.

* All numbers are rounded off and based on customer estimates. Your particular cost savings may vary.

